THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 1145. JUNE 18, 1910. Vol. XXII

Bovine Traumatic Indigestion.

Bovine "traumatic indigestion," which numbers traumatic pericarditis amongst its various sequelæ, is recognised as being of frequent occurrence, although its clinical differentiation is far from easy. To-day we print a Continental abstract which, if its conclusions are finally accepted, will do much to facilitate diagnosis. Its main new feature is the description, as a diagnostic symptom of traumatic indigestion, of a demonstratable collection of gas within the peritoneal cavity, which has escaped from the wound in the reticulum. The correctness of this observation may perhaps be doubted by some, and the possibility of recovery from such a condition has already been doubted upon the Continent. Regarding the latter point, it must be admitted—as Prof. Gmeiner, of Giessen, has already pointed out—that much depends upon the precise nature of the contaminating material; and it is quite certain that the bovine peritoneum possesses considerable powers of resistance to infections. A further point is that a chronic tympanitis which resists ordinary medical treatment is already generally recognised as one symptom of traumatic indigestion, and its refractory nature is regarded as of diagnostic value. It is very possible that this classic symptom is identical with the condition now described as an intra-abdominal gaseous accumulation. If so, which of the two different interpretations of its real nature is the correct one?

The treatment advised is not new, and appears rational, but we must confess that its recorded results suggest a possible fallacy in the possible fallacy in the author's conclusions. So large a proportion of recoveries are claimed that undoubtedly much room is left for errors in diagnosis—undetected in the absence of post-mortem observation—and this point is especially important in connection with a subject so replete with diagnostic difficulties as the digestive disorders of the ox. Following such supposed recoveries to the slaughter-house, and there searching for evidence of trauma of the reticulum, is of course indicated; but only in a very few cases will it be practicable.

The paper is worthy the attention of those engaged in cattle practice in this country, not only as regards the treatment it advises, but for its suggestions upon diagnosis. The most important point is the alleged frequent presence of gas free in the abdominal cavity. If gas is so present, it may fairly be inferred that it can only be so as the result of trauma.

N.V.A.—A Correction.

The paper on "Shivering and Stringhalt," to be presented at the annual meeting, is by Prof. John R. McCall, not by Principal James McCall, "the veteran professor," as noted last week. We regret the oversight.

GASTRO ENTERITIS—COCCIDIOSIS OF CATTLE.

By R. Eustace Montgomery,
Veterinary Pathologist, British East Africa.

In the annual report of the Chief Veterinary Officer for 1908-1909, attention is drawn to a disease which appeared at Nakuru about the end of last year. So far as it has been possible to trace the progress of this epizootic, it would seem to have originated in stock coming *via* Kisumu from the Kisii country, and it has been suggested that this latter area became infested from German Territory to the South. Since the recognition of this disease it has been detected over a large area of East Africa to the North and West of Nairobi.

At the early period of its recognition, gastro enteritis was regarded as rinderpest by many familiar with that disease, and in some districts to-day the Masai are satisfied that it is "Ol-Odwa" by which name they speak of the rinderpest that swept through Africa between 1896-1899. In many cases the similarity of clinical symptoms and post-mortem appearances is very great; and without a microscopic examination, or other evidence of an experimental nature, a distinction would hardly be justifiable. It is true that this disease has not spread with the rapidity of the rinderpest of 1896, but those familiar with the conditions in India (and I believe also in the Sudan) will know that it is possible for rinderpest to crop up sporadically in localised areas, to effect only a comparatively small mortality (20%—30%) in the stock and to die out, without spreading to neighbouring herds, despite the density of the native and animal population in that country. This is commonly ascribed to a natural and inherited immunity of the indigenous stock, due to the periodical exposure of the cattle to infection; such, in fact, as is known to obtain amongst bovines on the Steppes of Russia where rinderpest is endemic. A somewhat parallel example is seen between the usual course of redwater in local bred and imported animals. But when we consider that since rinderpest was last over the Kisii and Masai country four or more generations have resulted from the survivors of the great epizootic, it is difficult to conceive that an inherited immunity could have been transmitted so far down the tree. Further, experience has shown the greater mortality to occur among the young and the very old, and some of these latter are of a sufficient age to have themselves been exposed to the infection, or at the least, to be of the first generation; consequently they should possess a higher degree of resistance to an attack of rinderpest.

It is a well proved fact that the inoculation of even a small quantity of rinderpest blood will induce the same disease in about a week, and that placing susceptible animals in proximity to the sick is also sufficient to bring about infection within the same period. In order to determine without doubt whether any suspicious outbreak is rinderpest or is not, such experiments are necessary, for the causal micro-organism of this disease cannot be identified with even the strongest microscope.

When, therefore, the Chief Veterinary Officer reported that experiments of this nature had been negative, it was justifiable to assume that the Nakuru animals were not suffering from true cattle plague.

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In September rumour gave place to a definite report that a disease very similar to rinderpest had crossed the Guaso Nyero from the North, and appeared to be spreading rapidly southwards through Meru. We received information that buffalo and eland were dying by the roadside, and that large herds of native cattle were attacked. As a result of these representations I was instructed to proceed to Meru, and if necessary institute a station for the manufacture of anti-rinderpest serum. It was eventually shown that this was but a severe outbreak in an acute form of gastro-enteritis, and it was demonstrated that all affected animals harboured a minute micro-organism which zoologically belongs to the coccidia, and is known as *Eimeria stiedæ*. More recently it has been proved that the disease at Kisumu is due to the same organism.

The commonest symptoms of this *coccidial* disease are now so well known that it is only necessary to review them very briefly. Usually ushered in by a rise in temperature, manifested by lack of vigour and a staring coat, the sickness later shows itself by an increased discharge from the eyes and nose, by increased malaise and by diarrhœa. The character of each of these main symptoms may vary considerably in accordance with the severity and acuteness of the attack; to such an extent is this that in the same herd one may find animals showing every graduation in intensity. Opposed to the hyperacute case which shows ulceration in the gums and is passing fæces comparable to those of a severe case of dysentery-diarrhœa with much blood and mucus and is obviously very ill, is the chronic form. In this the patient is able to walk about, and even work for a time, his coat is harsh and skin hidebound. The animal gradually loses all flesh and becomes very anæmic. As a general rule it is the young stock which show the more acute symptoms, and the old animals those of the more chronic character. In some instances the disease may commence severely and, a temporary partial recovery ensuing, it may assume the chronic type; whilst in others the animal takes on all the symptoms of a "piner" from the commencement. It is natural that the more acute and severe symptoms have attracted most attention, and in the majority of outbreaks this type has predominated, but the writer has seen many of the more chronic type at Kisumu and in the Northern Masai territory, where the disease has been existent for some time.

The appearance on post-mortem examination will vary to a degree corresponding to the symptoms. In the acute form one will find an intensely congested and inflamed intestine, particularly in the hind portions of the gut, and the fourth stomach is often similarly infected. In very bad cases the mucous coat is quite destroyed and is covered by a layer of necrotic tissue and coagulated blood. In the chronic type the intestines show no great alteration, but, like the membranes of the mouth and eye, is much paler than normal, and as is common in most anæmic disorders, the muscles will be soft and soapy, and the chest and abdominal cavity may contain an increased quantity of fluid.

The Cause.—Gastro-enteritis is due to a minute parasite, a coccidium, which penetrates the cells lining the intestine and destroys them. This micro-parasite belongs to the protozoa, a division of the animal kingdom, to which also belong the organisms of redwater, East Coast Fever, fly disease and malaria, whereas the organisms of such diseases as anthrax, ulcerative lymphangitis and quarter-evil are bacteria, a branch of the vegetable kingdom.

As a Protozoa, this coccidium may be expected to have a complicated life cycle.

Resistant forms, oocysts, are discharged in the dung of sick animals, and contaminate pastures and water, and are *probably* capable of retaining their vitality under favourable atmospheric conditions for a very long time (*perhaps* for several years). This form as seen in a microscopical preparation of fæces is round or oval, measuring only 15 to 20 micromillimetres (about 6/10,000 inch), having a very well defined cyst wall, and finely granular contents which are usually collected towards one pole of the oocyst. No further development takes place until this oocyst enters a new susceptible animal when the digestive juices of the stomach and small intestines, stimulate the formation of four secondary cysts (sporoblasts) from the granular contents of the parent. Each of these sporoblasts then forms two minute sickle shaped bodies (sporozoites), and the action of the intestinal juice continuing, an opening is formed at one end of the oocyst, and the eight sporozoites are liberated into the gut. Each of these simple bodies may penetrate an epithelium cell of the intestine, where, by a process of simple growth and division it eventually appears as an oval body containing from 20 to 30 daughter cells or "merozoites" arranged like the staves of a barrel around the now exhausted parent. The host cell is of course destroyed, and breaking down, allows the merozoites to become liberated, and each of these in turn may penetrate a new cell and there repeat the process. A simple mathematical calculation will make clear what an enormous number of cells may have become invaded in the course of a few generations of this nature. These epithelium cells being damaged or destroyed interfere materially with the normal functions of the intestine, and to this interference are due the functional symptoms of the disease. As a result of the irritation consequent upon this cell invasion, variable degrees of inflammation follow, the small blood vessels underlying the epithelium rupture, and the blood together with the desquamated cells and the usual products of inflammation constitute the dysentric stools so commonly seen in this disease.

In such cases as recover, the area invaded may be small and the free multiplication of merozoites inhibited by those natural forces of the body which are collectively referred to as immunity. In other cases the cells from end to end of the intestine may have been invaded, and to this mechanical destruction and consequent loss of all intestinal functions, death may be due. More probably a fatal termination is due to blood poisoning following the formation of wounds and ulcers in the intestinal epithelium.

The merozoites, like the sporozoites are simple unclothed bodies, incapable of maintaining an existence outside the animal for more than a very short period, and probably unable to resist exposure to the acid juice of the stomach. It is therefore most unlikely that they are able to propagate the disease from one animal to another. In order to ensure continuance of species, it is necessary for them to assume a resistant form, and this is effected by certain merozoites acquiring male and others female characters.

These two conjugate to form a body (vermicule) around which a definite resistent cyst wall developes, and it is this oocyst when discharged with the dung which can remain vital for a long period, and can in time liberate sporozoites on entering a new animal.

So much we have been able to observe in gastro-enteritis, but the agriculturist may ask for evidence proving the connection between coccidia and disease.

Firstly let it be said that all species of coccidia are true parasites of cells, that they invariably destroy their host cells, and that they are known to induce a serious and very often fatal disease in centipedes, in rabbits, and in birds, both domesticated and wild. More interesting is the fact that in certain cantons in Switzerland a disease of cattle known as "red dysentery" or "bloody flux" in some cases causes serious mortality. Zschokke, Hess and Guillebeau have studied this condition and have demonstrated that coccidia are the cause. The clinical symptoms and post-mortem appearances in the Swiss and East African diseases are identical. We have,

therefore, justifiable grounds for assuming coccidia to be the cause in this country: proof is however necessary, and this we have obtained at Kisumu.

Through the courtesy of the Provincial Commissioner at Kisumu, all available animals suffering from this disease were collected and allowed to graze on a selected area so as to thoroughly infect it. Six yearling bullocks were purchased near Elementieta, off a farm where the disease had not appeared, and were sent to Kisumu, where they were apportioned into three lots, each of which was placed under varying conditions to endeavour to elucidate the exact mode of infection. The results in two lots were hardly what was anticipated, and it is perhaps inadvisable to do more than refer to the main points, since they must be repeated on a larger scale under more rigorous conditions. Lot "A" were permitted full liberty among the sick. Lot "B" were allowed full contact with the sick but were not permitted to eat the same grass or drink unboiled water. They were muzzled the whole day and night, except when feeding off green mealies which were sent from the Kabete Farm, an uninfected area. Lot "C" were not allowed contact with the sick, but were fed on the same grass, etc., as that soiled by the sick and eaten by lot "A."

One animal in lot "C" died before a result could be expected. The other has up to now shown no symptoms of the disease. All four animals in "A" and "B" developed a typical attack of gastro-enteritis, and the coccidia was regained from each.

These experiments would indicate that contact alone may bring about infection, and that grass and water are less guilty. As this is opposed to all known facts, it is not to be accepted until much more work has been conducted to arrive at the truth.

Diagnosis.—During my observations at Meru I was struck by the fact that an animal might be manifesting all signs of this disease, and yet not show coccidia in the fæces. They could, however, be invariably demonstrated when the whole length of the intestine was available for examination. It would seem reasonable to assume that the initial rise in temperature occurs at a time when such a number of merozoites have been developed as to invade and injure a considerable area of the intestine. This area of course will be in the neighbourhood of the first part of the small gut where sporozoites are liberated. The cellular invasion will gradually spread backwards into new ground, and as it expands, so will the more severe symptoms, including the diarrhœa, become manifest. But not until the area uninvaded is so limited that all the merozoites formed are unable to find receptive host cells, will there be a surplus of parasites to be discharged from the body, by the presence of which alone a positive diagnosis of coccidiosis can be effected.

This hypothesis is fully borne out in these experiments, for it was not until the disease as evidence by clinical symptoms, had been manifested for several days that merozoites appeared in the excreta. It is obvious that had this animal died, or been destroyed earlier the parasite would have been detected on examination of the lesions in the gut.

In following the course of infection in experimental animals it was found that during the first few days after appearance of coccidia in the dung only merozoites were present, and that these gave place later to the resistent oocysts as recovery became more advanced. In the two cases which recovered oocysts were seen in ever decreasing numbers for about six days after their first appearance, after which time no form recognisable as a coccidium has been seen. In acutely fatal cases I have not yet observed oocysts, whilst in the chronic cases oocysts alone have been observed up to this time.

The detection of these bodies, when numerous, is a simple procedure. A small particle of dung containing for preference blood or mucus is mixed with a drop of salt solution on a slide and examined under the 1/6 lens after applying a cover glass. On post-mortem examination a similar procedure is followed, utilising a scraping of the damaged gut in place of the fæces.

Treatment.—The experience of stock-owners and officers of the veterinary department has been that a purgative given as early in the attack as possible will produce favourable results in many cases. This, as will now appear evident, is the treatment which would be recommended on scientific grounds. As we have seen, the number of cells invaded at the commencement of an attack is small, and since any invaded cell is weakened, the action of a purge will be to remove these together with the contained coccidium and such merozoites as are lying free in the lumen of the intestine.

The principle here involved is that underlying all medicinal treatment—"remove the cause."

Naturally such treatmeut must be followed by good food, attention, and nursing, and if necessary by the exhibition of tonics. Although coming more under the heading of prevention, I may refer to a series of experiments which are about to be undertaken. Clean animals prior to exposure will receive varying doses of such simple intestinal antiseptics as Carbolic acid, Lysol, Permanganate of Potash, Iron, etc., and these will be repeated at practicable intervals. The object is to ascertain whether a chemical substance present in the intestines is sufficient to prevent the development of merozoites, or to inhibit this and so minimise the disease.

Prevention.—At the time this disease was first recognised in the Protectorate, it appeared to be spreading rapidly among new herds, and though this was not proved experimentally at Nakuru, it was regarded by most as of a contagious nature.

That this is so is amply proved by the experience of many stock-owners and by the experiments at Kisumu.

I am, however, strongly of the opinion that this disease has been in this country prior to December, 1908. The evidence upon which this suggestion is ventured is derived from (1) the history of the disease here and (2) the nature of the parasite.

We have already shown that animals placed under the most favourable conditions for acquiring infection have shown no outward symptoms for over three weeks; the period of incubation in a herd, following the importation of one or two sick animals would then be at least this much, and the disease could not spread with great rapidity.

The ripe oocyst on discharge from an animal is capable of maintaining its vitality for a very long period. In Switzerland the disease occurs only at certain seasons of the year (summer and autumn) and does not show itself on the same land every year. There can be small question that this land is infective, and that the oocysts are awaiting a favourable opportunity to again cause an outbreak. Whether this outbreak depends upon the climatic conditions influencing either the coccidium or the cattle, or is due to the effect of the fodder, etc. upon the animal rendering it more susceptible, cannot be stated. It is, however, evident that infection may remain latent for a long time.

A disease described in that country as Catarrhal fever of cattle has been observed in parts of German East Africa since 1906. In conversation with Dr. Sommerfeld, their Chief Veterinary Officer the other day, the writer learnt that since our results have been made known, he considers Catarrhal fever of cattle to be also a coccidiosis, and that the virulent rinderpest-like outbreak near Muanza will turn out to be the same.

Some settlers have expressed the opinion that cases of gastro enteritis have occurred in past years; and it is conceivable, in the light of present knowledge, that some reported outbreaks of rinderpest on the Abyssinian border may also be of this nature.

Stockowners, therefore, whilst being prepared for an outbreak of local origin, will be well advised to segregate all new purchases for at least six weeks before allowing them the run of the usual grazing grounds. Particular attention should be paid to those recovering from the disease and those suffering from the chronic form, for as we have seen, these are the animals capable of infecting land with resistant forms. All such cattle should be rigorously isolated, and their dung collected and buried or burnt. In post-mortem examinations the whole intestinal tract should be similarly treated.

The results of the new experiments will be made known as soon as possible, that stockowners on the outbreak of disease may treat the uninfected members of their herds without delay.

A stock of Epsom Salts, oil, and simple tonics, as iron, or gentian and salt should always kept on the premises, and affected animals should be treated in the very earliest stages of the disease: the fæces where practicable, being buried or burnt as an additional safeguard.

When large numbers are involved, they should be kraaled in as small an area as possible to obviate excessive soiling of the land. Particularly should infective animals be prevented from access to stagnant or slow running water courses.—*The Agricultural Journal of British East Africa.*

[An account of this disease as it occurs in Switzerland appeared in *The Veterinary Record* of Jan. 23rd, 1909, p. 487].

ABSTRACTS FROM FOREIGN JOURNALS.

"Traumatic Indigestion" in Cattle.

Arnold, of Idstein, addressing a meeting of veterinarians at Frankfort-on-Maine in January last, described a very common form of bovine indigestion which is distinguished by the following symptoms. The appetite is suppressed, and rumination is deficient; there is a tendency to constipation, and the dung is for the most part dry, while the rumen is filled to a greater or less extent with firm food. The left flank is distended by gas, and peristalsis is either retarded or quite suppressed. The pulse is normal in the early stages of the disease, but is accelerated later. The respiration is somewhat accelerated, but the respiratory sounds are normal. The heart sounds are normal, and there is no fever. Pain is not evident at first, but afterwards slight, progressively increasing evidences of pain appear; the beast groans, especially when urinating, or lying down, or going down a hill.

Upon manipulation of the left flank, either an atonic condition of the abdominal wall is noticed, or an intermediate space, filled with gas, is found between the abdominal wall and the rumen, the rumen being then only perceptible by pressure upon the abdominal wall (which is elevated by gas) and often being a hands-breath away from it. The rumen itself is solid, and thus contains no gases. There is therefore no tympany in the accustomed sense of the word, but a collection of gas *in the abdominal cavity above the rumen*. The introduction of the probang therefore has no effect. This collection of gas is of the greatest value in differential diagnosis.

This condition is often misunderstood, and treated as constipation by means of purgatives; but after purgation has taken place the symptoms persist in an unaltered degree. The condition really originates in the fact that an injury to the alimentary tube has established a means of communication between it and the abdominal cavity, and that the gases of digestion escape through this and collect in the abdominal cavity, in place of being expelled naturally. The condition is thus one of *traumatic* indigestion. When such animals are slaughtered one finds—usually in the reticulum, more rarely in the rumen—a small opening, better described as a wound; and closer inspection of the reticulum or rumen will reveal a pointed metal object perhaps still sticking in the wound. The escape of gases from the intestinal canal inhibits peristalsis, and this produces the symptoms of indigestion.

It is not surprising that these cases should be common, for pointed metal objects of the most varied description are very frequently found in the reticulum of slaughtered cattle; and, so long as they do not injure the walls of the viscus, they are not harmful. Their penetration of the walls of the reticulum takes place during vigorous contractions of the organ, and is favoured by different circumstances, such as the collection of firm masses of food in the rumen in considerable quantity, the filling of the binder part of the abdomen in advanced pregnancy, and, most important of all, by the animal being placed with the forequarters low down, or going down a hill. These circumstances often occur together, and reciprocally strengthen the disadvantageous action. From this it results that the foreign body must have a resistance offered to it, or a pressure applied to it, *from behind*, to cause it to penetrate the reticulum and pass beyond it; and this fact is of great importance in the treatment.

Arnold claims great success in treating this traumatic indigestion in its early stages, and details his treatment. The first and most important point is to remove all pressure or resistance acting upon the foreign body from behind, and this is accomplished by different measures.

The animal should be placed with the forequarters as high as possible—as by placing planks, etc., under the fore limbs. It is often difficult to induce owners to recognise any necessity for this measure, which is of the greatest importance. Its effect is to materially alter the relations of the viscera. The abdominal viscera fall back, and instead of the reticulum and heart being only separated by the diaphragm, as is the case when the vertebral column is horizontal, they become more widely separated, and the foreign body is unable to injure the heart without passing completely out of the reticulum. In this connection it must be noted that many of these foreign bodies, from their shape, do not make a complete exit from the reticulum with great facility. Nails, hairpins, etc., may remain sticking in the wound some time after their points have appeared outside the reticulum.

Often this alteration in position quickly causes cessation of evidences of pain and a general improvement in the animal's condition; the gases are absorbed and disappear. Generally, Arnold con-

siders, in consequence of the retreat of the stomachs from the diaphragm, the foreign body falls back into the reticulum and the wound heals, leaving behind it a small circumscribed peritonitis, which also soon recovers naturally.

A second measure of importance is the complete withholding of coarse food until the rumen has become more empty and softer. This can only be affected with certainty by means of a muzzle, as the above described alteration of position may quickly improve the animal's condition so far as to restore the previously lost appetite. She may then eat the litter, and thus increase the firmness and resistancy of the rumen.

The author also frequently administers copious lukewarm liquid nourishment consisting of cooked or scalded groats with the addition of linseed meal in the proportion of about one-third, thus making the preparation as mucilaginous as possible.

Simultaneously with these measures, he attempts to stimulate the digestion by giving drenches of sod. bicarb., gentian, carraway, and fennel mixed in water at intervals of about five hours. The administration of rape oil is also useful; but the author objects to active purgatives, saying that in many cases they do harm by increasing existing inflammation and pain by their irritation. In this respect he has also had very bad results with tartrate of antimony. (The last named drug is much more used in Germany than in England.—Transl.)

Arnold also dealt in some detail with the various ultimate sequelæ of *complete* penetration of the reticulum by a foreign body. They are as follows: —(1) In favourable cases the foreign body may become encapsuled. (2) Fluid can easily pass through the wound in the reticulum into the abdominal cavity, and thus cause a peritonitis which is frequently fatal. Bovine peritonitis, Arnold says, if not arising as a sequel to parturition, is generally caused by a foreign body. (3) Pneumothorax, from penetration of the diaphragm by the foreign body, with consequent admission of gases into the pleural cavity. (4) Penetration of the coronary arteries or the heart-wall itself by the foreign body, causing fatal internal hæmorrhage. (5) Traumatic pericarditis, with all its well-known effects. (6) In exceptional cases in bovines, as in other animals, the foreign body may appear externally through the skin.

The great importance of the communication, however, lies in the attention it draws to the first stage of illness caused by a foreign body, *viz.*, a traumatic indigestion arising from injury to the reticulum, the immediate recognition and correct treatment of which avoids the later sequelæ. The author claims about 90 per cent. of recoveries, not all of them in the very early stages, and has even had recoveries in cases in which he satisfied himself by auscultation that the heart came into contact with the foreign body at each heart beat. If the above described treatment is instituted early, the author says that recovery is almost invariable —(*Berliner Tier. Woch.*)

A Clinical Observation upon the External Migration of the Ovule.

The "external migration of the ovule" signifies the possible passage of an ovule from one ovary *across the abdominal cavity* into the *opposite* fallopian tube. The possibility of this occurrence has been verified by various experimentors; and Sparapani (*Il nuovo Ercolani*) confirms it by reporting a clinical case which is as convincing as any experiment.

A six-years-old bitch was affected with nymphomania, which various medicinal measures had failed to remove. Sparapani therefore advised spaying, and performed the operation in the month of July. Making his laparotomy incision near the median line, he ascertained that the left ovary was affected with cystic degeneration, and therefore removed it; the corresponding fallopian tube presented no alteration. The right ovary was normal, while its fallopian tube was thickened and indurated; Sparapani accordingly left this ovary intact, but removed the fallopian tube after ligaturing it near the extremity of the uterine horn.

All went well, and the bitch was used for sporting purposes at the end of August and in September. Early in October she became in heat, and was covered by a dog of her own breed; and on the 15th of December she gave birth to two puppies, well developed and in perfect health.

It is evident that in this bitch the ovules had passed from the right ovary, across the abdominal cavity, and into the left fallopian tube, thus gaining access to the womb, in which they were able to develop. Afterwards, as the result of an accident, Sparapani was able to make a post-mortem examination of the bitch, and further satisfied himself that no other method of impregnation had been possible.—*Annales de Méd. Vét.*

An Obstetric Method.

Schneider describes (*Münchener Tierärztliche Wochenschrift*) a procedure which he successfully adopted in a case of constriction of the cervix uteri, in order to avoid danger of hæmorrhage in dilatation. A well disinfected bovine bladder was connected with a bicycle pump and introduced, folded lengthwise, into the cervical canal, which had previously been slightly dilated with the fingers. The pump was then used slowly and carefully, and by its means the bladder, after about three quarters of an hour, was half filled with air.

Schneider then removed the bladder, as dilatation appeared to be sufficient; the membranes immediately appeared, and parturition began and was accomplished without hindrance.—(*Berliner Tier. Woch.*)

W. R. C.

ABOUT LIBRARIES.

Months ago, what time some of our members were bestowing on "The Bill" those mental diversities which have latterly been devoted to "Amalgamation," I remember that my attention was taken by the suggestion that a portion of the in-the-future-to-be-raised income of the R.C.V.S. should be devoted to the establishment of *a lending library* for the use of Members and Fellows. That suggestion rather stuck in my throat. That such a body as the veterinary surgeons of the British Isles should require to be dry-nursed in that manner, would not go down. And when, some time after, I came across an address by WILLIAM OSLER, M.D., F.R.S., President of the Medical Library Association, on "The Medical Library in Post-Graduate Work," (Belfast, July, 1909), I noted portions of it with the intention of bringing them to the notice of our own profession—for many of them will equally apply.

"With collectivism the order of the day it is very natural that those interested should associate themselves in an organisation which has for its object the welfare of the Medical Library. The Provisional Committee has given the new society a wide basis. The objects are:

(*a*) To bring together those engaged in or interested in medical libraries and medical literature, and for the discussion of matters associated with their fostering and care;
(*b*) To maintain an exchange for the distribution of duplicate books and periodicals;
(*c*) To increase the facilities for reference work;
(*d*) To encourage the study of the history of medicine;
(*e*) To issue publications dealing with medical library work;
(*f*) To form a library union amongst those of the medical libraries between which the exchange of books can be arranged—

Whether the British doctor has been a better book-lover or book-maker is an open question, but from the first Oxford movements in the thirteenth and in the early fifteenth centuries we find him ever in the ranks of the keenest bibliophiles. He has never been a great student of the book as such, and it is strange not to find him in the long line of splendid bibliographers, from the lovable Conrad Gesner to the encyclopaedic Billings, an Englishman of the first rank. I do not forget the useful books of Douglas, of Young, and of Forbes, but they are feeble efforts in comparison with the works of our foreign and American brethren. But the Englishman has made up by being a great book-lover. Some of the best known of collections have been made in this country by physicians. It would be impossible to parallel elsewhere the libraries of Mead, Askew, and William Hunter. The sale catalogues of the former tell of treasures (and of prices) that send a thrill of regret through the book-lover that his lot was not cast in those happy days. The William Hunter Library met a better fate, and in the University of Glasgow is an enduring and worthy monument to the elder of the two great brothers, so unlike in mind and manners, so like in the capacity to see the true value of collections.

It is safe to say that in proportion to population there are more medical libraries in these islands than in any other country in the world. We hope before long to have a proper census of them, and meanwhile I base the statement on casual observation. One of the first questions I ask on visiting a new town is, "Where is your medical library?" and I have been astonished at their extent and value. Usually in connection with the county hospital or the medical society, or both, many of them go back to the middle or later part of the eighteenth century, and bear witness to the culture and intelligence of the provincial physicians of those days.

In the national libraries of the capitals and of the Universities, such as the British Museum and the Bodleian, are large collections of medical books—that of the British Museum the largest in the country. Upon these public storehouses of bibliographical knowledge we all draw freely. In many of the small libraries there are special collections of great intrinsic or historical value. The college libraries of Oxford and Cambridge contain manuscripts and old books of exceptional interest. Diel's topographical catalogue shows how rich some of the Colleges are in the Greek medical manuscripts, particularly Balliol, New, Merton, All Souls, and Caius. Stowed away on their shelves are many fine folios, the gift of old members. Gulston's books are at Merton; New College has a very choice collection, including some of Walter Bayley; Floyer's books are at Queen's, Paddy's at St. John's, Coggan's at Oriel—indeed, there is scarcely a college library without interesting medical associations.

Of medical libraries proper, among which those of the Royal Colleges of the three capitals are the most important, easily first in extent and in the wide sphere of its influence is that of the Royal College of Surgeons of England, which is a model of good management. The library of the Royal Society of Medicine is the largest, I believe, connected with any medical society, and with the new organisation is rapidly growing. The libraries of the Faculty of Physicians and Surgeons of Glasgow, of the Medical Institution of Liverpool, of the Birmingham Institute, of University College, Bristol, the Worth Library of the Steevens Hospital, and the Manchester Medical Society, form collections of the first rank. One of the most valuable of professional libraries is that of the British Medical Association, under whose auspices, so to speak, we meet to-day. Founded in 1889, it now possesses more than 20,000 volumes, with a card catalogue. The books are chiefly modern, with a large proportion of monographs and valuable sets of foreign periodicals. It receives also, and this is a very important point for borrowers, the theses of the French universities. Through it the Association has already done good work by aiding in the formation of local libraries, and between 6,000 and 7,000 duplicates have already been distributed. An important step has recently been taken to make this a lending library for members of the Association, who will be able to borrow expensive works and periodicals such as are only occasionally required for consultation. Having frequently visited the library in the old buildings, I very gladly bear testimony to its usefulness. I am not surprised to hear that the annual number of readers is very large, more than 6,000 in 1906. In the new building the arrangements are excellent, and I have no doubt that provincial members visiting London will more and more resort to this library.

Many of the smaller libraries already existing in the provincial cities and towns are already well housed and well arranged, as for example the Reading, York and Norwich libraries, to speak of those which I know personally. There are scores of hospitals with good collections, some of the greatest value, as those of Exeter and Bath, and the Brackenbury Library, Preston. Some of them have Associations of exceptional interest. I have always been an admirer of Caleb Hillier Parry, of Bath, type of the old naturalist-physician, more common a few generations ago than now. His library in the Royal Hospital remains a fitting monument to a scholarly man of wide sympathies, and who left a deep impression on that part of the West Country which has given us such men as Jenner, Pritchard, and Symonds. In those days life was not so full, and competition was less keen, so that men had more time to read and to think. Many of the best of these smaller libraries date from the latter part of the eighteenth century and the beginning of the nineteenth century. Some of them have died into cupboards and barrels. Philip de Bury, one of the founders of Oxford libraries, in the fourteenth century complained bitterly that he found precious volumes defiled and injured by mice, worms and moths. A collection of this sort offered me a few years ago, I was able to buy through a friend, for the Johns Hopkins Medical School. It had associations with Joseph Priestley, with John Aikin, Thomas Percival and James Kendrick, well-known names in the North. As illustrating how valuable may be some of these out-of-the-way collections, there were in this one scores of seventeenth and eighteenth century pamphlets which were not in the London libraries.

Some of the best men have used books the least, and

there is good authority for the statement that shallowness of mind may go with much book-learning. Descartes, one of the most brilliant of thinkers and observers, had no library. At Egmont, asked by a friend the books he most read and valued, he took him into his dissecting room and showed him a calf—"There is my library." An identical anecdote is told of John Hunter. But these were exceptional men; and few will be found to doubt the importance of books as a means to what the same author called the end of all study—the capacity to make a good judgment.

It cannot be denied that many men practise, and do so successfully, with few journals and still fewer books. Radcliffe, whose memory is enshrined in two of the finest library buildings in the kingdom, and whose travelling Fellows are supposed to have at least a triennial thirst for new knowledge, neither read nor wrote books; and he is credited with the famous *mot* that he could set down the whole art of medicine on a sheet of paper. But conditions have changed, and medicine is now a rapidly progressive science, as well as an exceedingly complicated art, of which, at qualification, a man has only laid the foundation; and if he is to develop his intelligence—that is, to get an education—it must be by systematic post-graduate study. Whether he will get this education, whether, indeed, he will be able to keep what he has, will depend in part upon the sort of training he has received, and in part upon the type of mind with which he has been endowed. Unless as a student he has got that "relish of knowledge" of which Locke speaks; unless he has got far enough to have his senses well trained to make accurate observations; unless he has been taught how to use his intelligence so as to form a good judgment, the teacher will have more or less of a fool for a pupil, and between them make a sad mess of an education. After a few years such a man without mental exercise grows stale and is fit to do only the ordinary reflex practice, in which cough means an expectorant mixture, and heart disease digitalis. Some of the men of this type play a good game of tennis, others shoot and ride well, more play a good game of bridge, but they are lost souls, usually very dissatisfied with the profession—the kickers, the knockers, the grumblers, without a glimmer of consciousness that the fault is in themselves.

Post-graduate study is a habit of mind only to be acquired, as are other habits, in the slow repetition of the practice of looking at everything with an inquiring spirit. A patient with pneumonia has grass-green sputum. "Have I ever seen it before? Have I a note of it? Where can I get a good description of it? What does it signify?" These are questions preliminary to getting a bit of clinical education, trifling in itself apparently, but when stored up and correlated with other facts may become the basis for an intelligent judgment on an important case.

There are many factors in this training—note-taking, reading, the medical society, and the quinquennial brain-dusting at a hospital or a post-graduate school. But I am only here concerned with one—books. I would like to speak of the value of notes, however brief, collected through long years as the sole means whereby a man gets his experience codified and really helpful: but I cannot wander to-day from the book, in which I include the *Journal*.

But how can a busy man read, driven early and late, tired out and worried? He cannot. It is useless to try, unless he has got into the habit when he was not so busy; then it comes easy enough, and the hardest-worked man in the land may read his journals every week.

A few years ago when two young Irish-Americans called Mayo began to frequent the surgical clinics of Europe, no one knew where they came from; no one had ever heard of Rochester, Minnesota, and when informed that it was on the "Prairies," about 1000 miles north-west of Chicago, there was a shrug of the shoulders and "Oh!" Self education, post-graduate study, books, journals, laboratory work, have enabled these remarkable men to build up one of the largest and in some respects the most important surgical clinic in the world, and a town of less than 20,000 inhabitants has become the Mecca of all surgeons.

Like everything else that is worth having, a library costs money. Do not try to do too much, strive to have a large membership, which enables the fees to be low. In starting an organisation of this sort the work always falls on one or two men.

Were there time I should like to say a few words on the subject of *how* to read, but the essence of the whole matter I found the other day in the Bibliotheca Lancisiana, Rome, (founded in 1711, and containing the books of the famous Lancisi). In the opening address, 1714, *De recto usu Bibliothecæ*, the Abbe Carsughi discusses the subject in three sections, and gives some good rules. The first section, *Librorum scilicet delectum*, need not detain us, but in the second, *Legendi methodum*, he urges two important points—to read in a certain order and with a definite object, and *lente festinans* "unhasting but unresting." In the third section, *Adnotandi modum*, he urges the necessity of careful note-taking, quoting the praise of Clement of Alexandria, "Oblivionis medicamentum, monumentum senectutis et adjumentum memoriæ." He dwells upon the importance of study in the morning, which was all very well in those days, but is not one hour after six in the evening worth now two before eight in the morning? (I am sure it is to me!) With half-an-hour's reading every night as a steady practice, the busiest man can get a fair education before the plasma sets in the perianglionic spaces of his grey cortex.

But there is another side of the question of books and libraries—man does not live by bread alone, and while getting his medical education and making his calling and election sure by hard work, the young doctor should look about early for an avocation, a pastime, that will take him away from patients, pills, and potions. One of the best features I find in my "old country" colleagues is the frequency with which they have hobbies. No man is really happy or safe without one, and it makes precious little difference what the outside interest may be—botany, beetles, or butterflies, roses, tulips or irises, fishing, mountaineering, or antiquities—anything will do so long as he straddles a hobby and rides it hard. I would like to make a plea for the book, for the pleasant paths of bibliography, in which many of us stray to our great delight.

Judiciously cultivated, bibliography has many advantages as a pastime for the doctor; a little patient care, a very small expenditure of money, and a constant look-out for the books wanted are the essential requisites. Nor is there ever any difficulty in the choice of a subject—anything he may be interested in has its bibliographical side. One friend (Dr. Turrell) a very busy man, is a keen fisherman, and has found the time to collect a library on this subject, and has written the article on it for the *County History of Oxfordshire*. Another man has kept up his classics, and collected everything relating to Horace. Another has a library relating to the order of St. John. Another friend in large general practice has found time to make a collection of the masterpieces of English literature, which has not only been a diversion and an education, as it has brought him into the best company of the past four centuries, but he tells us there is another side—it has been a better investment than life insurance. A member of our profession, the late Prof. Corfield, made one of the best modern collections of bindings, the sale of which at Sotheby's in 1904 was one of the bibliographical features of the year. Once in a subject it is extraordinary how it grows and develops. As Atkinson says: "It is an art of itself, which is not easily sought into or acquired, but which, if so acquired, may stand both his pleasure and profit in very great stead in a very long or a short life." And the busiest general practitioner may find the time for first-class work. Many of you may have seen a book issued two years ago from the Oxford Press on Greek and Roman medical and surgical instruments, the only separate treatise on the subject which has appeared in English. It illustrates the hobby of a very hard-worked practitioner in the town of Hartlepool—John Milne, whose spare time and whose vacation have been spent in studying this aspect of Greek and Roman archæology."

Obviously, with the enormous numerical disparity in favour of the older branch of the profession—10 to 1 is not an over-estimate—a large and complex organisation on the model of the Medical Library Association is uncalled for—indeed the suggestion would be an absurdity, but that is no sort of argument against an extension of the precedent which has been established by at least one of our local associations in the formation of a lending library. A much stronger argument is the fact that our members, in the country districts in particular, are essentially outdoor men, and, as Professor Osler points out, the student habit of reading once lost is not to be picked up again without effort—the reading habit must be nursed to be kept alive. Against that we may set the fact that with us, as with the human practitioners there is a proportion of men who do keep up their reading, and who keep fairly well abreast of the marvellous advances which medicine is making, and has made continuously for the past thirty years.

With so limited a field, it is unlikely that books on veterinary science will ever form an efficient section of any public library, except, perhaps, the British, and the four College libraries to which statutory copies are supplied.

Is there any reason, beyond the ever present *vis inertiæ*, why our local Associations should not each and all possess themselves of a professional lending library? The expense can hardly count; a very few pounds annually spent would maintain the English portion of it. The foreign portion would probably be even more limited. And as "tributaries," individual members might afford themselves the occasional luxury of a newly published work to be read and then passed on to the shelves of the library of their local Association, where it would be almost equally under command and only a little less accessible than if under their own roof. The machinery should not present much difficulty. The chief one—the man—the librarian, is the pivot of the whole thing. Just as the efficiency of the local Society depends on the capacity and enthusiasm of its secretary, so the success of its library would depend largely on the selection of an efficient librarian.

The possible benefit, may I say the need, for such an auxiliary was forced upon me just at the time of Prof. Osler's lecture, by the accident of having to look through for his widow the books of a member recently deceased. The *selection* showed that the man had grasped the scientific side of his profession well enough. *The dates!* What was their story? Was it the "busy practice"; was it the young family? Was it simply mental dry-rot? I think not. This man knew too much to think that he had "learnt it all." But I thought then, and I think now, that had a local professional library been at his command, both he and the veterinary profession had been the better for it.

The book lovers in the veterinary profession are not numerous—possibly it is as well so. But I think that of those few there are more who love the book for the author—for his power of observation, his sound reasoning, his clearness of expression. I know that there are some also who love books as books—who have pride and pleasure in the possession of copies of the early writers on the art, and of handsome editions, and of complete series.

COM. SOUTHTON.

DISEASES OF ANIMALS ACTS 1894 TO 1903, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Counties Affected	Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Animals Attacked	Out-breaks	Out-breaks.	Slaugh-tered *
GT. BRITAIN. Week ended June 11	32	37			4	10	Essex 1	...	38	304
Corresponding week in 1909 ...	29	37			11	22		1	39	216
Corresponding week in 1908 ...	22	24			16	64	London 6	...	78	506
Corresponding week in 1907 ...	23	24			17	41		3	66	208
Total for 24 weeks, 1910	765	924			168	461	Monmouth 1 Lanark 2	312	650	5966
Corresponding period in 1909 ...	680	914			278	1091		454	816	7405
Corresponding period in 1908 ...	577	762	3	112	335	1270		626	1051	5041
Corresponding period in 1907 ...	573	772			437	1048		396	1204	5618

Board of Agriculture and Fisheries, June 14, 1910.

Parasitic Mange (outbreaks)

IRELAND. Week ended June 4	...	...	...	...	...	...	...	1	5	107
Corresponding Week in 1909 ...	...	...	...	...	...	...	...	4	6	209
Corresponding Week in 1908 ...	...	...	...	...	...	...	...	2	3	53
Corresponding Week in 1907 ...	...	...	...	...	1	1	2	3	4	18
Total for 23 weeks, 1910 ...	4	7	...	...	1	2	34	328	49	1160
Corresponding period in 1909 ...	3	3	...	...	...	...	45	277	34	563
Corresponding period in 1908 ...	4	7	...	...	...	...	20	262	95	1823
Corresponding period in 1907 ...	1	3	...	...	1	1	45	162	61	1053

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, June 8, 1910

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

Parasitic Mange—Legal Point.

At Norton Cross Petty Sessions on Tuesday, June 7, before Captain Vipan and Mr. J. H. Beeby, Joseph Green and Albert Green (son), farmers, of Orton Lodge, and Arthur Payne, Yaxley Fen, farm foreman, were summoned by Inspector Yates, officer of the R.S.P.C.A., for "that they did illtreat a certain mare by neglecting to provide for her proper attention," at Yaxley on 24th May.

Mr. Whitsed, in opening the case, stated that the neglect alleged on this occasion on the part of the defendants was neglect in providing treatment for an animal known to be suffering from disease and thereby causing pain and torture—in itself illtreatment. He outlined the case and called evidence.

Inspector Yates, R.S.P.C.A., stated that on Tuesday, 24th May, in company with P.C. Hodson, he went to defendant Green's farm in Yaxley Fen. He there saw defendant Payne and found an aged black mare in a brick stable on slings. The mare was standing in a "quagmire" of excrement, and on the floor of the shed would probably be a cartload of manure. In front of the animal was a heap of grass and hay mixed. She was in a most emaciated condition and was "eaten alive" with parasitic mange; her hair in a line from the poll to the tail was all gone and large patches of hair from the inside of the thighs and the ribs and other parts of the body were gone also. There were numerous skin sores caused by the parasitic mange. The mare constantly gnawed her limbs where she could reach them. Below the bone of the off-side shoulder the rope slings had cut a wound about three inches long. This had evidently been discovered by someone, as the rope had since been readjusted. The hind legs were diseased and foul with a complaint known as "grease." In answer to enquiries, Payne stated to him that Mr. Green, jun., had gone away the previous Friday to the Yeomanry Camp at Boughton, and that his only instructions were that the mare should have plenty of good food, but it was no use giving her good food as she would not touch it. He further stated that the mare had slipped her foal about six weeks previously, and that was the reason she had been put in slings; she had got down and could not get up again without assistance. Neither defendants gave him instructions about treating the mare, and that Mr. Green, sen., had seen her the previous day and told him to give her plenty of good food.

On the following day witness saw Mr. Green, sen., in Peterborough Market and informed him of the visit. Defendant replied that his foreman had seen him the previous night and communicated the visit to him. He admitted ownership and that he had seen the animal on the previous Monday, but had noticed nothing the matter with her. On witness's suggestion he said he would see Mr. Lockwood, M.R.C.V.S., and if he could not do her any good he would have her killed.

On the Thursday following, in company with Mr. Mackinder, M.R.C.V.S., he again visited defendant's premises. The mare was brought out, and whilst there Mr. Lockwood also came. As soon as he saw the mare Mr. Lockwood told the foreman Payne that treatment would be useless and very expensive and advised him to tell his master to have the mare destroyed at once. The mare was killed the same day and taken to Henson's. On the following Saturday he saw the defendant Green, jun., who had returned from Camp, and he stated that the mare had received all the attention necessary and that she had been led out to exercise, and that every spring she had had a touch of mange to get over which they turned her out to grass, and that was the reason he had had no vet. to her and dressed her himself.

At the post-mortem examination it was found that the mare had seven broken ribs—four on one side and three on another. All were more or less in process of healing and must have been broken some few weeks. The cap of the stifle of the near hind leg was dislocated and had worn away the surface of the joint, causing considerable pain. Witness afterwards saw Green, sen., and invited him to inspect the injured portions.

Jos. Mackinder, veterinary surgeon, Peterborough, stated that on 26th May he examined the mare and found her suffering from acute parasitic mange and in a very emaciated and poor condition, and in slings. As far as he could judge no attempt had been made to cure her. The mare must have suffered considerable torture and pain by reason of the complaint. The disease was palpable to any novice.

Joseph Green, the senior defendant, elected to give evidence on his own behalf. He said that the mare had been turned out to exercise in a grass field up to about the 20th May, but they found that when she got down she could not get up; his son, he believed, had dressed the mare, and that as soon as the Inspector spoke to him he called a "vet." and afterwards acted on his advice and had the mare slaughtered.

Albert Green said that he was aware that the mare was suffering from mange, and he had previously to his going to camp treated her for it; she always had plenty of food and had been exercised from time to time up to his going to camp.

In cross-examination defendant admitted he always dressed the mare when the foreman was away working on the land; but he had never told him he had dressed the mare, neither had he left instructions for treatment when he went away to camp.

After consideration during a short absence, the Chairman said that the Bench were of opinion that the mare had been shockingly neglected, but the neglect was not such as to amount to ill-treatment within the meaning of the Section under which the charge was laid. The case would therefore be dismissed.

Mr. Whitsed at once made application to state a case (appeal), as the spread of parasitic mange had become of considerable importance and one to which the Board of Agriculture were paying considerable attention. The Society was anxious, therefore, to have the opinion of a higher Court as to whether neglect to treat an animal known to be suffering so acutely as this one was did not amount to ill-treatment within the meaning of the Act. Mr. Whitsed pointed out that the necessity for treatment had been admitted by Green, jun., in his evidence.

The Bench agreed that if the usual and proper notices were served the application would receive the attention of the Magistrates.

Tetanus and the Motor Car.

According to the Registrar-General's returns there has been a sudden great increase in recent years in the number of deaths directly due to "tetanus"; and this in spite of our increasing knowledge as to its methods of invasion and the extensive use of anti-tetanic serum now prevalent. Taking the figures from 1889 to 1900, the average number of deaths in England and Wales was between 30 and 40. In 1900 it rose to 66, to fall again to 57 in 1901. Then came a sudden and unexpected increase. In 1902 the number rose to 201—almost four times that of the preceding year. This in itself might have been due to a fortuitous concatenation of circumstances, did not the returns for succeeding years negative the idea, and force one to the conclusion that some cause which came into force in or about 1902 must still be operating. The returns which show this are as follows: 1903, 257 deaths; 1904, 257; 1905, 248; 1906, 254; 1907, 226; 1908, 180. That this increase is a real and not an apparent one can, we think, be confidently

asserted. The apparent increase in cancer, for example, is probably partly due to increased powers of diagnosis and care in certification on the part of the profession; but such a view can scarcely be maintained regarding tetanus, for the clinical picture of the disease is so striking that even the layman can diagnose it, and its symptoms were perfectly well known and had been carefully studied long before Kitasato's brilliant researches settled its microbic origin. The increase, therefore, in recent years can scarcely be other than a real one. When we come to the causes, however, of this great rise, we are, it must be confessed, upon much more uncertain ground. One of these causes, however—perhaps the most important—would seem to be connected with the great increase in the use of motor cars, which has been such a noticeable feature in the advances of recent years. On *a priori* grounds one would have thought that such an increase in mechanical traction, and the consequent diminution in the number of horses employed in large cities, would have tended in quite the opposite direction—for it is well known that certain animal excreta may teem with the tetanus bacillus; the gradual disappearance of horses from the streets and main roads ought, one would have thought, to have tended to purify these arteries of traffic, and coincidently lowered the death-rate by removing the source of infection. Unfortunately this comfortable theory has not proved correct in practice—and the cause is not far to seek. The weak point in the argument has been that although the amount of animal excreta has been sensibly diminished in the streets, yet the distribution of what has been left has been greatly increased by the dust raising powers of the motor car, and germs have thus been spread far and wide over an area greater than heretofore. It is this greater distribution, therefore, which to our mind explains the sudden and surprising increase which has been steadily maintained from 1902 to 1907. The slight fall in 1908 is distinctly hopeful, and is probably largely due to the fact that the supply of horses has been diminishing more rapidly than in previous years, now that it has been proved commercially that horse-traction cannot compete with mechanical. It remains to be seen whether the returns for 1909 will maintain this decrease. We sincerely hope so; but improved conditions cannot be obtained until either animal excreta disappears from our streets, or some efficient dust-laying contrivance checks the distributing power of the all-pervading motor car.—*British Medical Journal.*

Royal Agricultural Society of England—Experiments with Calves.

At the monthly Council the Committee recommended that the following gentlemen be appointed on the Joint Committee to carry out the experiments with calves, sanctioned at the last meeting of the Council: Lord Northbrook, Sir John M'Fadyean, Mr. Alfred Mansell, and Mr. Harold Swithinbank.

The Committee unanimously desired to place on record their opinion, and that of their Veterinary Adviser, that the proposed demonstration is, from the veterinary point of view, unnecessary, and the reasons adduced in support of it do not justify the proposed expenditure on either educational on practical grounds.

They further desired to protest against the decision of the Council to incur a large expenditure in demonstrating acknowledged facts, while the requests recently made by the Committee for a smaller sum for the purpose of aiding useful veterinary research and investigation have been refused.

Lord NORTHBROOK, in moving the adoption of this report, pointed out that the Committee had carried out the instructions of the Council to make arrangements for the proposed demonstration with calves by appointing four members to serve on a Joint Committee. He desired to add to the four gentlemen mentioned the names of Mr. Carr and Mr. Adeane, who had taken a great interest in this movement, and he understood that Mr. Bowen-Jones would be willing to second that proposal. He was glad to say that the Committee had been able to secure the services of one of their members who was in sympathy with the demonstration in Mr. Mansell, who had kindly consented to act on the Joint Committee. His own views with regard to this matter were known to the Council, and those views were shared by Sir John M'Fadyean and Mr. Swithinbank. They were willing, however, to give their services in carrying out the demonstration, because they were of opinion that if it were not likely to result in much good, it could not do any harm. Mr. Swithinbank, who had carried out research in connection with tuberculosis, was an authority on Bacteriology, and his services would be most valuable. Sir John M'Fadyean had not only consented to serve on the Joint Committee, but he had assured them that he would be willing to carry out the demonstration. Sir John had already drawn up a short memorandum which would be referred to the Joint Committee. There were one or two points, however, to which he would like to refer. Sir John said it was obvious that the weight attaching to the ultimate results would depend upon the number of animals employed in the experiment. Perhaps the best plan would be to endeavour to obtain during the first season (next autumn) from twenty to thirty calves for the purpose of the experiment. The first step to that end would be to get in touch with the owners of one or more large herds of autumn-calving cows, and to obtain their consent to the whole of the cows being tested with tuberculin, on the understanding that the Committee was to have the option of taking (at a specified price) all the heifer calves born of the reacting cows in the herd during the few months following the test. In the event of arrangements of the nature suggested being made, it would be necessary to have the birth of each female calf in the selected herds notified by telegram to Woburn, so that someone could proceed without delay to bring the animal to Woburn. This suggested that, if possible, it would be a great advantage to have the selected herds within reasonable distance of Woburn, for if the herds were a great distance it would scarcely be practicable to bring the calves to Woburn without their having received any milk at their native place. At Woburn it would be necessary to enter into a contract for the supply of whatever milk might be required for feeding the calves, and a plant would have to be provided for heating the whole of the milk to such a temperature as could be relied upon to destroy any tubercle bacilli that might be present in it. Assuming that the experiments could be conducted as suggested, there would be very little risk that any of the calves would be diseased or infected at the time when they were brought to Woburn, and at Woburn they must be absolutely cut off from contact with other cattle. It must be observed, however, that even in the circumstances outlined there would be some risk of an actually tuberculous calf being introduced at Woburn, because statistics showed that probably about one in every two or three hundred calves born of tuberculous cows was itself tuberculous at the time of birth. With a view to excluding or minimising this risk, it would be necessary to have all the calves tested at intervals after they were brought to Woburn. Finally, Sir John thought it well to point out that in experiments of the nature mentioned, in which young calves were gathered together from different farms and reared by hand, there was a distinct risk that the infection of white scour or other diseases of young calves might be introduced with some

of them, and an outbreak of that kind might seriously interfere with the experiment.

He (Lord Northbrook) had only quoted that to show that there were very considerable difficulties ahead in carrying out the demonstration. If it were not done on a large scale, and in a thorough manner, they could not expect to get any useful results. He could not think that the cost mentioned had in any way been underestimated.

With regard to the expression of opinion in the Report of the Committee, the first paragraph merely recorded that at the last meeting of the Veterinary Committee, when thirteen members were present, the Committee had unanimously decided to adhere to the opinion which they had expressed at the last meeting of the Council on this matter. He thought it was unnecessary for him to add very much more, because he had spoken at considerable length on the subject at the last meeting. He regretted that the arguments which had then been used had been unavailing in preventing the proposed expenditure. As, however, the settlement of the matter was stated to be urgent, the Committee had consented at the last Council meeting to a decision being then and there arrived at. The Council had decided that the demonstration should be carried out, and the Committee were bound to accept that decision.

With regard to the last paragraph, it might be said that the expression that the application of the Veterinary Committee for a grant for the Royal Veterinary College had been *refused* was not verbally correct, because, as a matter of fact, it was stated by the Duke of Devonshire, when moving the adoption of the Special Committee's report, that the application had not been negatived, but deferred. However, it had been deferred for a very long time, for the Veterinary Committee's application had been made in December, 1908, and in February, 1909, referred to the Special Committee. In presenting the report of that Committee on March 3rd, 1909, the Duke of Devonshire had said that the consideration was deferred, and that "it was hoped that in the course of a few years they might have a reserve fund which would yield an assured income large enough to enable the Council to do more than they were able to do in extending and improving the operations of the Society." They were little forwarder in July, for the Chairman of the Special Committee then stated that "the other questions of increased grants for the Veterinary and Chemical Departments the (Special) Committee had been obliged to postpone, and he (His Grace) hoped that in the course of time they would be able to give further consideration to these matters, which had been deferred and not negatived."

That took place on July 28th last year, and, as far as he was aware, the Special Committee had taken no further steps to consider the Veterinary Committee's application; so that if the matter had been only deferred, it had been deferred indefinitely, and that did not seem to be very different from a refusal of what had been asked for. He could only say that it certainly came as a great surprise to the Veterinary Committee that after their request for a modest grant of a further £200 to the Royal Veterinary College for the purpose of bacteriological and pathological research had been refused on the grounds that the finances of the Society did not permit of such an increase of expenditure, the Council should approve the proposal to spend a much larger sum—a proposal that had never been submitted to or approved by the Finance Committee—(Hear, hear)—on a demonstration which was considered by the Veterinary Committee to be unnecessary. That course had, however, been adopted by the Council, and he would only add in that connection that the Committee felt that they had been placed in a peculiar and unfortunate position, and that it raised a doubt in his mind as to how far the Veterinary Committee, as at present constituted, was of value as an advisory committee to the Council.

The report of the Veterinary Committee having been received, and adopted, it was moved by Lord Northbrook, seconded by Mr. Bowen-Jones and resolved, that a Committee be appointed to carry out the proposed experiment with calves, consisting of the representatives of the Veterinary and Chemical and Woburn Committees, with Mr. Adeane and Mr. Richardson Carr. —*Live Stock Journal.*

The Veterinary Committee of the Royal Agricultural Society and the Council are not seeing eye to eye regarding the experiment in connection with tuberculosis in calves, arranged for at the meeting of Council in May. Rather a curious situation had been created. The Committee appears to protest against this expenditure of £800, while the Council have refused to resume the Society's subsidy of £200 to the Royal Veterinary College. Yet, while they protest against the experiment being entered upon, and are supported by Sir John M'Fadyean in their action, the Committee and Sir John M'Fadyean are going to carry out the experiment. This does not appear a hopeful way of doing business. A committee which begins anything in a half-hearted way never does much good, but a committee which enters upon an experiment in the utility of which it does not believe is hardly likely to be regarded as authoritative when it comes to declare results. The proper course, in the circumstances, is for the Veterinary Committee to resign and let another committee be appointed, or the Council may take the particular business to which the Committee is hostile out of its hands and commit to a special committee unhampered by prejudices.—*Scottish Farmer.*

The cost of "Foot and Mouth" in U.S.A.

The cost of eradicating foot-and-mouth disease in the United States on the occasion of the last outbreak in November, 1908, barely kept within the £60,000 granted by Congress for the purpose, and Mr. James Wilson, the Secretary for Agriculture, states in his report that if the outbreak had persisted longer, or extended further, it would have been necessary to call for further funds. Bureau of Animal Industry had a force of 572 men, including 159 veterinary surgeons, at work in eradicating the disease, while a total of 3,636 animals were slaughtered, the appraised value of which was £18,756 18s. 6d., two-thirds of which value was paid as compensation by the Department of Agriculture and one-third by the States in which the animals were respectively slaughtered. The expenses of burial, disinfection, etc., were shared in the same way.—*Live Stock Journal.*

Sequel to Anthrax.

The discovery of anthrax upon the Manor House Farm, at Rossington, near Doncaster, has had a remarkable sequel, several people in the village having been seized with a mysterious illness since the burning of the carcase of the affected bullock.

The animal was found dead in a field, and after it had been dressed it was discovered to have suffered from anthrax. One man, a farm labourer named Charles Ward, soon afterwards developed the dread disease, and died in the Doncaster Infirmary from it on Saturday, June 4th, the jury on Monday returning a verdict of death from anthrax.

Another employee, named Garnet, also developed it. The contagion in this case, it is supposed, was communicated through a tiny puncture in the skin, made by the bite of a fly. Garnet was hurried into the Doncaster Infirmary, and his life has been saved by an operation, a

piece of flesh having been cut from his arm. Mr. Adams, the local butcher, who dressed the carcase, and a groom who was present have also been seriously ill, but both are now recovering.

Since the burning of the carcase several people in Rossington have been seized with an illness which takes the form of severe sickness and diarrhœa, which has prostrated them and confined them to bed. All attribute their illness to inhalation of the smoke and fumes from the burning carcase, which were blown by the wind over the houses they inhabit.

A Doncaster gentleman, who, with his family, was recuperating in the village, has also been taken ill, and left Rossington for Doncaster.—*Daily Chronicle.*

Association of Veterinary Officers of Health.

The annual meeting this year will be held in the Municipal Buildings, Glasgow, on Thursday, Sept. 29. The list of contributants who have promised papers is a very distinguished one and ought to afford a literary treat to all veterinary officers of health. The subjects to be dealt with are :—

"The Eradication of Bovine Tuberculosis" by Profs. Bang and Ostertag. Discussion will be opened by Mr. J. Malcolm, F.R.C.V.S., Birmingham.

"Fungi on Flesh and Other Foods in Relation to the Fitness of such foods for Human Use," by Prof. Glaister, Oxford University.

"Malignant Disease in the Lower Animals," by Dr. Murray, of the Imperial Cancer Research Fund.

"The Relationship of Scarlet Fever, Diphtheria, and Sore throat of Man to the affections of the Udder of Cows," by Prof. Gofton, of the Royal (Dick) Veterinary College, Edinburgh.

The President this year is Mr. J. S. Lloyd, Veterinary Officer of Health for Sheffield.

It is earnestly desired that this Association, which is comparatively young, should be supported by every Veterinary Officer of Health, and applications for membership should be sent direct to the Secretary—A. M. Trotter, M.R.C.V.S., Moore Street Abattoir, Glasgow.

THANKS TO ELECTORS.

Sir,—Please allow me the use of your columns to thank those Fellows and Members of the Royal College of Veterinary Surgeons who successfully supported my candidature at the recent election.

I am deeply grateful of the honour they have done me, and trust that my efforts as a Councillor will warrant their confidence.

I shall at all times be glad to receive and carefully consider suggestions from members tending to the general advancement of the profession.—Yours, etc.,

J. S. LLOYD.

Town Hall, Sheffield. June 15.

Gentlemen,—I esteem very highly your expression of continued confidence; it is my earnest desire to serve our profession to the best of my ability.—Yours faithfully,

HY. SUMNER.

15 Vauxhall Road, Liverpool, June 15.

Personal.

Mr. W. HUNTING has resigned his position of Chief Veterinary Inspector to the London County Council and his daily duties will devolve upon Mr. R. Bryden who on June 30th will be transferred from the Tramways Department to the Public Control Committee.

Mr. Hunting has been appointed Consulting Veterinary Surgeon, and will now be available for consultations with his professional friends—a line of practice to which we believe he intends to confine himself.

ARMY VETERINARY SERVICE.

Extract from *London Gazette*,

WAR OFFICE, WHITEHALL, June 14.

ARMY VETERINARY CORPS.

Capt. W. B. Edwards to be Major. Dated June 12.

OBITUARY.

FITZWILLIAM WRIGHT, M.R.C.V.S., Seven Sisters Road, London, N. Graduated, Lond: Dec., 1885.

On Wednesday, 8th inst., Mr. Walter Schröder, deputy coroner, held an inquiry at the Dispensary Hall, New End, into the circumstances attending the death of Mr. Fitzwilliam Wright, aged 46, a veterinary surgeon, who died shortly after being found in an unconscious condition on the Heath near the Leg of Mutton Pond on the previous Friday evening.

Mrs. Mary Eleanor Wright, widow, stated that she was sister-in-law to the deceased, who resided with her. He had been in fairly good health and went out to his business. He occasionally had attacks of giddiness, which was attributed to a fall from a tramcar about a month ago, when he injured his face. He was a very sober man and led a most exemplary life. Witness last saw him alive on the previous Friday between 11.30 a.m. and noon when he appeared in his usual health. He had to attend a case at Finchley, and she thought he was probably making his way to the Tube Railway when he was found.

Dr. W. H. Payne, of Gayton Road, the police divisional surgeon, said that when called to the deceased he found he had been dead a little while. There were a few abrasions of recent date on the face, probably caused by deceased striking the tree as he fell. The post-mortem examination revealed a healthy state of all the internal organs with the exception of the heart, which was very fat and flabby, and quite empty. Death was due to syncope from cardiac failure, which could have been caused by exertion. The weather at the time was very sultry, and this might have brought on heart failure.

The jury returned a verdict of "Death from natural causes."—*Hampstead and Highgate Express.*

JOHN COLEMAN, V.S., St. Dunstans, Colne, Wilts.

Mr. Coleman died on June 7th from apoplexy. Aged 76 years.

NEW OPERATION FOR ROARING.

Sir,

On reading through my description of the above operation I find that I omitted to state that the method employed was that initiated by Prof. Woodruff, and also that the "glove stretcher forceps" were entirely his own idea and greatly facilitate the operation.—Yours truly,

ARNOLD SPICER.

New Oxted. June 13.

THE CYCLOPEDIA OF SPORT, by The Earl of Suffolk and Berkshire. New and Enlarged Edition, Vol. I., No. I. 1/- net. William Heinemann, London.

Annual Report of the Public Health Department of the City of Edinburgh, 1909.

COMMUNICATIONS AND PAPERS RECEIVED :—Messrs. Titus Lander, G. Mayall.

The Daily Chronicle, The Highgate Express, The Morning Advertiser.